

TECHNICAL REVIEW DOCUMENT
For
RENEWAL AND TRANSFER OF OPERATING PERMIT 02OPPB249

Black Hills/Colorado Electric Utility Company, LP – Pueblo AIP Station
Pueblo County
Source ID 1010396

Prepared by Jayson Ellis
August 2011

I. Purpose

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted August 1, 2007, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

II. Description of Source

Prior to issuance of the renewal permit Black Hills/Colorado Electric Utility Company, LP purchased Aquila, Inc. Black Hills submitted an administrative amendment on July 24, 2008 to transfer ownership of the permit. The draft permit reflects the transfer of ownership.

This source is classified as an electric services facility under Standard Industrial Classification 4911. This facility consists of four identical diesel-powered internal combustion engines capable of generating a total of 10 MegaWatts (MW). Also located at the facility is a 200,000 gallon diesel fuel storage tank, which is listed in the permit as an insignificant activity, due to low emissions.

The four engines are General Motors, Diesel Fuel-Fired Internal Combustion Engines, Model No. MP-45, Each Rated at 29.52 MMBtu/hr and 3500 hp (Site Rated). Each unit is capable of generating 2.5 MW of electric power.

This facility is located at 475 William M. White Blvd, in Pueblo, CO. The site is about 1 and ½ miles west of the Pueblo Airport. This facility is located in an area that is designated as attainment for all criteria pollutants. There are no affected states within 50 miles of this facility. The Great Sand Dunes National Wilderness Area, a federal class I designated area, is within 100 km of this facility. The Great Sand Dunes National Monument, those portions not included as National

Wilderness Areas, is federal land within 100 kilometers of the facility. This area has been designated by the State to have the same sulfur dioxide increment as federal Class I designated areas.

This facility is not classified as a major stationary source for purposes of prevention of significant deterioration (PSD) review requirements, since the potential to emit of any single pollutant is less than 250 tons per year.

The summary of emissions for the renewal permit has been reproduced here. The fuel usage limit and pollutant emission limits have not changed from the last permit modification, except for SO₂. Ultra Low Sulfur Diesel (ULSD) is now being delivered to the facility and diluting the Low Sulfur Diesel (LSD) currently in the storage tank. SO₂ emissions are now below the APEN de minimis levels.

Emissions at the facility are as follows:

Pollutant	Potential to Emit (tons/yr)	Actual Emissions (tons/yr)
PM	4.9	0.05
PM ₁₀	4.0	0.04
SO ₂	Below APEN de minimis	0.13
NO _x	230.0	2.27
CO	97.6	0.96
VOC	8.8	0.09

HAPS	Potential to Emit (tons/yr)
Benzene	0.065
Toluene	0.029
Xylenes	0.020
1,3-Butadiene	0.003
Formaldehyde	0.082
Acetaldehyde	0.054
Acrolein	0.006
Naphthalene	0.006
Total HAPs	0.265

Potential to emit is based on permitted emissions. Actual emissions are based on the APEN submitted in July 2008 listing emissions for 2007. The table shows that these engines were not utilized very much in 2007. The engines are permitted to burn up to 1,020,000 gallons of diesel fuel per year, but only consumed 10,065 gallons in 2007, resulting in a capacity factor of about 1%.

Hazardous air pollutant emissions were also calculated to show emissions are below major source levels.

MACT Requirements

Although the facility is not a major source for HAPS, the EPA has been promulgating rules for area sources (sources that are not major), those requirements that could potentially apply to this facility are discussed below:

Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ)

The provisions in 40 CFR Part 63 Subpart ZZZZ (published in the March 3, 2010 Federal Register) have not been adopted into Colorado Regulation No. 8, Part E and are therefore not state enforceable.

Final revisions to the RICE MACT were published in the Federal Register on March 9, 2011 and these revisions address existing (commenced construction prior to June 12, 2006) compression ignition engines at area sources. Since these engines were in the August 1, 2003 Title V permit, they are considered existing stationary CI RICE located at an area source of HAP emissions and must comply with the applicable emission limitations and operating limitations in MACT ZZZZ. The source is required to comply with these requirements by May 3, 2013. The appropriate applicable requirements will be included in the renewal permit.

NSPS Requirements

The Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII) does not apply since all the engines were constructed prior to July 11, 2005. No modifications or reconstructions have occurred since July 11, 2005.

CAM Requirements

The engines do not utilize a control device, thus CAM does not apply. If a control device is used to meet the future requirements of 40 CFR Part 63 Subpart ZZZZ, CAM will not apply because the MACT was proposed after November 15, 1990.

Greenhouse Gases

Greenhouse gas emissions from this facility were calculated using emission factors found in 40 CFR Part 98, Subpart C and the requested fuel use limit. Emissions are significantly less than 100,000 TPY CO₂e. Any future modification greater than 100,000 TPY CO₂e may be subject to regulation.

III. Discussion of Modifications Made

Source Requested Modifications

Transfer of Ownership

The Transfer of Ownership Agreement, received on July 24, 2008, was not processed as an administrative amendment, but has been changed in this permit renewal. Facility permit was transferred to Black Hills/Colorado Electric Utility Company, LP from Aquila, inc.

Responsible Official

The responsible official was changed to Mark Lux.

Biodiesel Usage

Permit was revised to allow for the use of up to 20% biodiesel fuel. Information from EPA shows that biodiesel is similar to straight diesel fuel in regards to emissions. Tests done on highway vehicles shows significant reductions in CO, VOC and particulate when a 20% mixture of biodiesel and diesel is burned. NO_x remains relatively unchanged. Permit limits remain unchanged with the use of biodiesel.

Fuel Sampling

Sampling of diesel fuel will be reduced to annual from semi-annual. Sulfur content has been analyzed and shown to be less than a detection limit of 0.01 wt%. Sulfur content will continue to decrease with new deliveries of ULSD.

Engine Design Rate

The design rate of the engines is being changed from 27.72 MMBtu/hr to 29.52 MMBtu/hr as noted on the most recent Air Pollutant Emission Notice. The original design rating was based on manufacturer's information, while the revised rating was based on actual performance of the engines at the site. This change will not affect the PTE of the source since it is a synthetic minor and the PTE limits are not based on maximum operating conditions of the engines. PTE is based on the requested fuel use limit.

Other Modifications

In addition to the modifications requested by the source, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

Page Following Cover Page

The monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

Section I – General Activities and Summary

- Revised the language in Condition 1.4 to include Section IV, Condition 3.d and to note that only part of Condition 3.g is state-only enforceable (last paragraph). Note that Section IV, Condition 3.d (affirmative defense provisions for excess emissions during malfunctions) is state-only until approved by EPA in the SIP.
- Made revisions to the language in Condition 3 (prevention of significant deterioration) to be more consistent with other permits.

Section II – Specific Permit Terms

- The SO₂ permit limit has been removed because the emissions are below the APEN de minimis level of 2 tons per year. Current diesel in the storage tank has a sulfur content below 0.01 wt%. At the permitted fuel consumption limits and current sulfur content of the fuel, SO₂ emissions would be less than 0.7 tons per year (based on AP-42 emission factors), which is far below the APEN de minimis level.
- A diesel fuel restriction and testing has been added to limit sulfur content to 0.028 wt%, which is above current sulfur content in the storage tank and any new shipments of ULSD. This will ensure that the facility stays under the APEN de minimis level for SO₂.
- The portable monitoring language was updated to the most recent version.
- A new condition was added to cover the Reciprocating Internal Combustion Engine MACT (40 CFR Part 63 Subpart ZZZZ). All four generators at the facility must comply with the applicable emission limitations and operating limitations in MACT ZZZZ. The source is required to comply with these requirements by May 3, 2013. The appropriate applicable requirements are included in the renewal permit.

Section IV – General Permit Conditions

- The language in this section was updated to the most recent version.

Appendices

- Updated direction to the facility in Appendix A
- Updated justification for the diesel tank being listed in the insignificant activities list in Appendix A.
- Added scanned plot plan to Appendix A.
- Appendix B and C were replaced with latest version.
- Changed the mailing address for EPA in Appendix D.

- Changed Air Pollution Control Division contact to Matt Burgett in Appendix D.